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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,076	12/23/2003	Shigemi Wakabayashi	247117US0	8104

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EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/743,076

Applicant(s)

WAKABAYASHI, SHIGEMI

Examiner

Callie E. Shosho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. All outstanding rejections are overcome by applicants' amendment filed 12/28/05.

It is noted that applicants filing on 12/28/05 of English translation of foreign priority document previously filed 12/23/03 perfects the foreign priority filing date.

The new grounds of rejection set forth below are necessitated by applicants' amendment and thus, the following action is final.

Claim Objections

2. Claim 3 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 3, which depends on claim 1, discloses water-insoluble polymer obtained from monomers having alkyl group having at least 20 carbon atoms while claim 1 has been amended to recite that the water-insoluble polymer has alkyl group of 20-30 carbon atoms in its side chain. Thus, claim 3 fails to further limit the scope of the claim on which it depends, namely, claim 1, given that claim 3 is broader than claim 1. That is, claim 3 encompasses polymers obtained from monomers having alkyl groups having at least 20 carbon atoms which includes alkyl groups having more than 30 carbon atoms, while claim 1 is now limited to polymer obtained from polymers obtained from monomers having alkyl groups of 20-30 carbon atoms. Thus, claim 3 includes alkyl groups that are outside the scope of claim 1.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-3, 5-6, 7-8, and 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al. (U.S. 5,990,202) in view of Zhu (U.S. 5,889,083).

Nguyen et al. disclose ink comprising aqueous dispersion of colorant wherein the colorant comprises water-insoluble dye such as xanthene and polymer obtained from monomers including C₂-C₄₀ alkyl (meth)acrylate, 0-10% salt-forming monomer such as acrylic acid, and monomer copolymerizable with the alkyl (meth)acrylate and salt-forming monomer. The ink also comprises 10-25% co-solvent such as N-methylpyrrolidone or aliphatic alcohol, i.e. permeability controlling solvent (col.1, lines 10-14, col.3, lines 1-7 and 13-22, col.6, lines 12-50, col.8, lines 40-59, col.11, line 59-col.12, line 30, and col.15, lines 37-55). Given that Nguyen et al. disclose polymer obtained from same type and amount of monomers as presently claimed, it is clear that the polymer would intrinsically possesses solubility in water as presently claimed.

The difference between Nguyen et al. and the present claimed invention is the requirement in the claims of acid number of the water-insoluble polymer.

Zhu, which is drawn to aqueous inks, disclose the use of polymer possessing acid number of 20-500 in order to fix colorant in the to substrate and to provide abrasion resistance (col.4, lines 47-54 and col.5, lines 1-7).

In light of the motivation for using polymer with specific acid number disclosed by Zhu as described above, it therefore would have been obvious to one of ordinary skill in the art to use

polymer with such acid number, including that presently claimed, in Nguyen et al. in order to produce ink that fixes colorant to substrate and has good abrasion resistance, and thereby arrive at the claimed invention.

5. Claims 1-2, 5, and 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gore et al. (U.S. 2003/0055178) in view of Ishizuka et al. (U.S. 2002/0025994) and Zhu (U.S. 5,889,083).

Gore et al. disclose ink comprising aqueous dispersion of colorant containing crosslinked polymeric nanoparticles obtained from monomers including C₁₆-C₂₄ alkyl (meth)acrylate and 2-40% salt-forming group containing monomer that is neutralized and dye wherein the dye is attached to or reacted with the polymeric nanoparticle (paragraphs 2, 8, 14, 16, 35, 38, 51, 66, 70, 72, and 88). For further detail regarding the dye, Gore et al. refers to Ishizuka et al. which discloses the use of oil-soluble dye such as quinophthalone or phthalocyanine dyes (paragraphs 16-18). Given that Gore et al. disclose polymer obtained from same type and amount of monomers as presently claimed, it is clear that the polymer would intrinsically possesses solubility in water as presently claimed.

The difference between Gore et al. and the present claimed invention is the requirement in the claims of acid number of the water-insoluble polymer.

Zhu, which is drawn to aqueous inks, disclose the use of polymer possessing acid number of 20-500 in order to fix colorant in the to substrate and to provide abrasion resistance (col.4, lines 47-54 and col.5, lines 1-7).

In light of the motivation for using polymer with specific acid number disclosed by Zhu as described above, it therefore would have been obvious to one of ordinary skill in the art to use polymer with such acid number, including that presently claimed, in Gore et al. in order to produce ink that fixes colorant to substrate and has good abrasion resistance, and thereby arrive at the claimed invention.

Response to Arguments

6. Applicants' arguments regarding Sakakibara et al. (U.S. 2004/0132942) and Lau et al. (U.S. 2003/0149133) have been fully considered but they are moot in view of the discontinuation of the use of these references against the present claims.

7. Applicants' arguments filed 12/28/05 have been fully considered but, with the exception of arguments relating to Sakakibara et al. and Lau et al., they are not persuasive.

Specifically, applicants argue that Zhu is not a relevant reference against the present claims given that the present claims are drawn to polymer particle having acid value of 30-120 while Zhu discloses binder resin that forms true solution or a colloidal suspension.

However, there is no requirement in Zhu that the binder form true solution or colloidal suspension. Rather, Zhu discloses that the binder "may" form true solution or a colloidal suspension. Thus, such formation is not required.

It is noted that Zhu discloses that any suitable binder resin can be used including water-dispersible resins (col.4, lines 55-57 and col.5, lines 40-56) which would include polymer particles.

Applicants also argue that there is no disclosure in Zhu of polymer particle comprising water-insoluble polymer having alkyl group of 20-30 carbon atoms in its side chain and acid value of 30-120 as presently claimed.

It is agreed that there is no disclosure in Zhu of polymer particle having alkyl group of 20-30 carbon atoms in its side chain as presently claimed, however, note that Zhu is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, namely, the use in ink of polymer possessing acid number of 20-500 in order to provide abrasion resistance to the ink and in combination with the primary reference, discloses the presently claimed invention.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

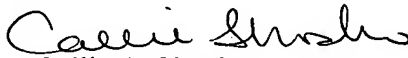
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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
3/17/06